SB 610 WATER SUPPLY ASSESSMENT AND VERIFICATION REPORT

FOR

QUARRY CREEK PROJECT
CT 11-04 AND EIR 11-02

March 26, 2012

Prepared by

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ABBREVIATIONS AND ACRONYMS

AF	Acre-Foot
AFD	Acre-Feet per Day
AFY	Acre-Foot per Year
CUWCC	California Urban Water Conservation Council
CEQA	California Environmental Quality Act
City	City of Carlsbad
CMWD	Carlsbad Municipal Water District
CDPH	California Department of Public Health
DWR	California department of Water Resources
GPD	Gallons Per Day
MGD	Million Gallons per Day
mg/L	Milligrams per liter
NR	No Reference
SANDAG	San Diego Association of Government
SDCWA	San Diego County Water Authority
SF	Square Foot
SWRCB	State Water Resources Control Board
UWMP	Urban Water Management Plan
WSA	Water Supply Assessment

SECTION 1

PURPOSE

This Water Supply Assessment (WSA) Report was prepared by Carlsbad Municipal Water District (CMWD), a subsidiary district of the City of Carlsbad. It conforms to California Water Code Sections 10631, 10657, 10910, 10911, 10912, and 10915 referred to as SB 610 and Business and Professions Code Section 11010, and Government Code Sections 65867.5, 66455.3, and 66473.7 referred to as SB 221. SB 610 requires that the water purveyor of the public water system prepare a water supply assessment to be included in the environmental documentation of certain proposed projects. SB 221 prohibits approval of a tentative subdivision map, or a parcel map for which a tentative subdivision map is not required, or a development agreement for a subdivision of property of more than 500 dwelling units unless the city or county provides written verification from the applicable public water system that a sufficient water supply is available. In addition, the law requires the city or county make a finding that sufficient water supplies are, or will be, available prior to completion of the project.

The City of Carlsbad requested the WSA as part of an environmental document being prepared for the Quarry Creek Project, Carlsbad Tract (CT) 11-04 for Environmental Impact Report (EIR) 11-02. This WSA is intended for use by the City of Carlsbad in its evaluation of the Project under the California Environmental Quality Act (CEQA) process. This WSA evaluates water supplies that are or will be available during normal, single-dry, and multiple-dry years during a 20-year projection to meet existing demands, expected demands of the Project, and reasonably foreseeable planned future water demands served by the CMWD.

SECTION 2

FINDINGS

This WSA Report shows that the water demand projections for the proposed Project are included in the water demand forecasts within the 2010 Urban Water Management Plan (UWMP) of the CMWD that was adopted by the Board of Directors on June 7, 2011. Water supplies necessary to serve the demands of the proposed Project, along with existing and other projected future users, as well as the actions necessary to develop these supplies, have been identified in Carlsbad Municipal Water District - Water Master Plan Update, March 2003 document.

The City of Carlsbad Growth database used in the 2003 Water Master Plan, and the 2010 UWMP, is based on the City's Local Facility Management Zone (LFMZ) data. The Project is located exclusively in LFMZ 25, where there is one existing unit plus the proposed Project. The City's adopted Housing Element (2011) requires a minimum of 306 high density units (≥ 20 DU/acre) and 200 medium high density units (≥ 12 DU/acre) for the existing 100 acres of Quarry Creek. The Project analyzed in this WSA Report includes the following:

- 129 High density Apartments
- 202 High density Condominiums
- 325 Medium High density attached and detached condominium residential units
- 1.5 acres Community Facilities
- 2.1 acres Community Facility Site
- 1.3 acres Community Recreation Area
- 3.3 acres Trail, View Area, Water Quality Basin
- 87.9 acres Open Space

Unit demand criteria for single and multi-family land use are applied to the projected number of dwelling units, and account for both domestic and irrigation water use. CMWD's water use factor for single-family residential is 550 gallons per day and multi-family is 250 gallons per day. Multi-family includes multiple units (apartments) and multiple Planned Development Units (condominiums). The 2003 Water Master Plan projected a water demand in LFMZ 25 of 71,500 gallons per day (GPD) or 80 acre-feet per year (AFY). The recent 2010 UWMP projected a demand for LFMZ 25 of 343,750 GDP or 385 AFY. The proposed Project has an estimated 656 units and 8.2 acres of Community Facilities/Recreation area resulting in an estimated water demand of 180,900 GPD or 203 AFY after applying the unit demand criteria noted above for apartments, condominiums, and landscaping.

This WSA Report demonstrates that the water demand for the proposed Project exceeds estimates for the same land area in the 2003 Water Master Plan by 123 AFY. However, CMWD's 2010 UWMP, and with the development of the resources identified by the SDCWA in their 2010

UWMP, there will be sufficient water supplies over a 20-year planning horizon to meet projected demand of the proposed Project and the existing and other planned development projects within CMWD's service area.

No additional infrastructure are required other than constructing, by the developer, extensions of water pipelines, and recycled water pipelines for landscape irrigation, from existing CMWD pipelines which are identified for the proposed Quarry Creek Project.

Based on a normal water supply year in CMWD's 2010 UWMP, the CMWD estimated five-year increments for a 20-year projection indicate the projected potable water supply will meet the projected water demand of 20,281 AFY in 2015, and 22,122 AFY in 2035. Based on dry year forecasts, the estimated water supply will also meet the projected water demand during single and multiple-dry year scenarios. Supply and demand totals for a single dry year are estimated at 26,348 AFY in 2015 to 30,786 AFY in 2035. Multiple three-year dry periods are 27,420 AFY in 2015 to approximately 30,560 AFY in 2035.

Based on the findings above there is a sufficient water supply to serve the proposed Project and the existing and other planned projects in CMWD's service area during both normal and dry year forecast. An adequate supply is further accounted for in SDCWA's 2010 UWMP through year 2035.

SB 610 Water Supply Assessment Summary

Project: Quarry Creek, CT 11-04, Carlsbad, California

The following determination has been made regarding the above-referenced project:
The total water supplies available to the CMWD during normal, single-dry and multiple-dry water years within a 20-year projection will meet the projected water demand under the Project in addition to the demand of existing and other planned future uses, including, but not limited to, agricultural uses.

The foregoing determination is based on the following water supply assessment information and supporting information from the 2010 Urban Water Management Plan prepared by the Carlsbad Municipal Water District.

SECTION 3

PROJECT DESCRIPTION

3.1 Project Location

The Quarry Creek CT 11-04 (Project) encompasses a total of approximately 156 acres in the northeast portion of the City of Carlsbad, County of San Diego, California. The Project consists of Assessor's Parcel Numbers 167-040-11-00 (56 acres) and 167-040-21-00 (100 acres). The north boundary is Haymar Drive, the south boundary is near Simsbury Court, the west boundary is property owned by the State of California, and the east boundary is adjacent to the City of Oceanside. Access to the Project is obtained from Haymar Drive and Marron Road in the City of Oceanside.

3.2 Project Land Use Summary

The approximate 156-acre Project site currently consists of vacant, inactive, open space. Quarry Creek Investors, LLC has submitted an application to the City for a proposed residential development of the Project site. For purposes of this water supply assessment, the information presented in the Master Land Use Plan shown in Appendix A was used to develop the Project land use summary which comprises the following:

Residential

RH – High Density Apartments – 129 units on 7.1 acres
RH – High Density Condominiums – 202 units on 11.1 acres
RMH – Medium High attached & detached condominiums – 325 units on 30.7 acres

Public Use

Community Facilities (landscaped parks) – 1.5 acres
Community Facility Site (Daycare Center) – 2.1 acres
Community Recreation Area (park, pool, and restroom) – 1.3 acres
Trail, View Area, Water Quality Basin – 3.3 acres

Open Space

Southerly Open Space Corridor Preserve – 57.9 acres
Wetland preserve – 20.1 acres
Buena Vista Creek and Buffer – 8.4 acres
Northern Brush Management Zone – 1.5 acres

3.3 Project Water Demand

Because the Project is primarily residential, water demand is based on demand unit criteria applied to the residential units that account for domestic use and landscape irrigation.

Homeowner Association maintained landscaping areas, parkway landscaping, recreation lot, and parks will be irrigated with recycled water obtained from CMWD's recycled water system.

The unit demand criteria for water demand determinations were obtained from City of Carlsbad Engineering Standards, Volume 2 Potable and Recycled Water Standards, Part 3.2. CMWD's water demand criteria for single-family residential (8 Dwelling Units per acre or less) is 550 gallons per day and multi-family is 250 gallons per day. Multi-family includes multiple units (apartments) and multiple Planned Development Units (condominiums, triplex, etc.). The Public use areas were assigned 1 dwelling unit to account for restrooms. In addition, site landscaping was applied a unit demand criteria of 2,000 gallons per day per acre.

Table 1 shows the estimated water demand for the proposed Project which is 180,900 gallons per day (203 AFY) after applying the unit demand criteria noted above for apartments, condominiums, and landscaping.

Table 1
Quarry Creek CT 11-04 Proposed Land Use and Projected Water Demands

Planning Area	Landuse	Dwelling Units or Acreage	Unit Demand Criteria	Average Water Demand
R-1	High density Affordable Apartments (22 D.U. per acre)	129 units	250 GPD/unit	32,250 GPD
R-2	High Density Condominiums (22 D.U. per acre)	202 units	250 GPD/unit	50,500 GPD
R-3, R-4, R-5	Medium High Single Family Residential (12 D.U. per acre)	325 units	250 GPD/unit	81,250 GPD
P-1, P-5	Community Facilities	1.5 acres landscaping	2,000 GPD/acre	3,000 GPD
P-2	Community Facility Site (Day Care)	1 unit + 2.1 acres landscaping	250 GPD/unit 2,000 GPD/acre	250 GPD + 4,200 GPD = 4,450 GPD
P-3	Community Recreation Area (park, pool, restroom)	1 unit + 1.3 acres landscaping	250 GPD/unit 2,000 GPD/acre	250 GPD + 2,600 GPD = 2,850 GPD
P-4	Trail, View Area, Water Quality Basin	3.3 acres	2,000 GPD/acre	6,600 GPD
OS-1, OS-2, OS-3, OS-4	Open space	87.7 acres (5± acres will have temporary irrigation for CSS re-vegetation)	0 GPD/acre	0
			Total	180,900 GPD

3.4 Comparison of Project Water Demand to Water Master Plans

The City of Carlsbad Growth database used in CMWD's 2003 Water Master Plan is based on the City's Local Facility Management Zone (LFMZ) data. The Project is located exclusively in LFMZ 25, where there is one existing unit plus the proposed Project. The 2003 Water Master Plan referenced a total of 130 single family dwelling units (i.e. <4 units/acre) would be constructed in LFMZ 25 resulting in an estimated total demand of 71,500 GPD or 80 AFY. The 2010 Urban Water Management Plan used a 2009-2010 growth projection which indicated the number of units in LFMZ 25 at 626 single family dwelling units resulting in a total demand of 344,300 GPD or 386 AFY, which is greater than the proposed Project demand of 180,900 GPD or 203 AFY.

SECTION 4

CARLSBAD MUNICIPAL WATER DISTRICT

4.1 Background

The entire Project area is located within the CMWD service area. CMWD covers an area of 20,682 acres, approximately 32.32 square miles, and provides water service to most of the City of Carlsbad. Carlsbad's housing stock composition consists of mostly single-family homes, with some multi-family homes, and a few mobile homes.

CMWD receives all of its potable water supply from the SDCWA through four connections. Water within CMWD is delivered through 440 miles of pipeline, 57 pressure regulating stations, five pumping stations, ten storage tanks, and one 195 million gallon reservoir.

Based on San Diego Association of Government (SANDAG) growth rate projections, in 2010, CMWD's service area population was 84,838 and it is projected to increase to 101,402 in 2035. The number of service accounts, in 2010, was 27,479 with a total demand of 15,076 AFY. By 2035 the number of service accounts is projected to increase to 31,485 with a total demand of 22,122 AFY.

CMWD has developed a five phase recycled water master plan for production and distribution within its service area. Phase I and Phase II have been completed capable of meeting a total demand in excess of 5,000 AFY with a current demand of approximately 3,600 AFY. Planning has been initiated on Phase III of the master plan, which will be able to meet an additional demand of 3,300 AFY for a total of 8,300 AFY. The proposed Project will be able to receive recycled water from the existing recycled water distribution pipeline system.

4.2 Infrastructure & Conveyance

To serve the proposed residential and park uses, the developer will need to extend pipelines from existing water and recycled water pipelines located adjacent to or near the Project to use areas within the Project. Two pressure reducing stations on the potable water pipelines are required near the south boundary of the Project area to reduce the supply water pressure to meet CMWD pressure requirements to customers. No additional infrastructure is required.

SECTION 5

WATER SUPPLY PLANNING UNDER SB 610

5.1 Background

SB 610 was passed in 2002 and amended Sections 10910 through 10915 of the Water Code by requiring a water supply assessment be completed for all development projects subject to CEQA. SB 610 also amended Section 10631 of the Water Code, which relates to Urban Water Management Plans (UWMPs). The water supply assessment process under SB 610 is designed to rely on the information typically contained in UWMPs, and involves answering the following questions related to a proposed Project:

1. Is the proposed project subject to CEQA?
2. Is the proposed project a "Project" under SB 610?
3. Is there a public water system that will service the proposed project?
4. Is there a current UWMP that accounts for the project demand?
5. Is groundwater a component of the supplies for the project?
6. Are there sufficient supplies to serve the project over the next twenty years?

The following subsections address the SB 610 water supply assessment questions as they relate to the proposed Quarry Creek Project, CT 11-04. This WSA builds on the 2010 UWMP completed for CMWD, and also the 2010 UWMP for SDCWA.

5.2 Is the Proposed Project Subject to CEQA?

CEQA applies to projects requiring an issuance of a permit by a public agency, projects undertaken by a public agency, or projects funded by a public agency. This project requires an issuance of permits by a public agency and is, therefore, subject to CEQA.

5.3 Is the Proposed Project a "Project" Under SB 610?

The second step in the SB 610 process is to determine if the proposed project meets the definition of "Project" under Water Code Section 10912(a) where a "Project" is defined as meeting any of the following criteria:

1. A proposed residential development of more than 500 dwelling units;
2. A proposed shopping center or business establishment employing more than 1,000 persons or having more than 500,000 square feet of floor space;
3. A proposed commercial office building employing more than 1,000 persons or having more than 250,000 square feet of floor space;
4. A proposed hotel or motel, or both, having more than 500 rooms;
5. A proposed industrial, manufacturing, or processing plant, or industrial park planned to house more than 1,000 persons, occupying more than 40 acres of land, or having more than 650,000 square feet of floor area;

6. A mixed-use project that includes one or more of the projects defined above; or
7. A project that would demand an amount of water equivalent to, or greater than, the amount of water required by a 500 dwelling unit project.

Alternately, if a public water supply has less than 5,000 service connections, the definition of a "Project" also includes any proposed residential, business, commercial, hotel or motel, or industrial development that would account for an increase of 10 percent or more in the number of the public water system's existing service connections, or a mixed-use project that would demand an amount of water equivalent to, or greater than, the amount of water required by residential development that would represent an increase of 10 percent or more in the number of public water system's existing service connections.

The proposed Project will construct more than 500 dwelling units; and therefore, qualifies as a "Project" under Section 10912(a) of the Water Code.

5.4 Is There a Public Water System That Will Service the Proposed Project?

The third step in the SB 610 process involves determining if there is a public water system to serve the Project. Section 10912(c) of the Water Code identifies a public water supply system as a system for the provision of piped water to the public for human consumption that has 3,000 or more service connections. The City of Carlsbad has determined that CMWD's public water supply system will be used to supply water to the Project. A wholesale water supplier, SDCWA, supplies potable water to CMWD's public water supply system.

5.5 Is There a Current Urban Water Management Plan (UWMP) That Accounts for the Project Demand?

The fourth step in the SB 610 process involves determining if there is a current UWMP that considers the projected water demand for the project area. The Water Code requires that all public water systems providing water for municipal purposes to more than 3,000 customers, or supplying more than 3,000 acre feet per annum, must prepare an UWMP, and that this plan must be updated at least every 5 years. Section 10912(c)(2) of the Water Code states: *If the projected water demand associated with the proposed project was accounted for in the most recently adopted urban water management plan, the public water system may incorporate the requested information from the urban water management plan in preparing the elements of the assessment required to comply with subdivisions (d), (e), (f), and (g).*

The CMWD's current 2010 UWMP was adopted on June 7, 2011 and was subsequently submitted to the California Department of Water Resources (DWR) on July 6, 2011, and can be viewed on the DWR website. The CMWD purchases water from the SDCWA, and the current SDCWA 2010 UWMP was also adopted in June 2011. The proposed Project demand was accounted for in the 2010 UWMP based on developing 626 single family dwelling units and

applying a unit demand criteria of 550 gallons per day per unit which resulted in a higher water demand than the proposed Project.

The CMWD's 2010 UWMP includes projected water supplies required to meet future demands through 2035. In accordance with Water Code Section 10910 (c) (2) and government Code Section 66473.7 (c) (3), information from the 2010 UWMP has been used to prepare this WSA Report.

The proposed Project water demands are included in the 2010 UWMP which includes units identified in the City's LFMZ 25 and utilizes historical data through 2010 and projections out to 2035.

5.6 Is Groundwater a Component of the Supplies for the Project?

The next step in the assessment process is to address the requirements of Water Code Section 10910(f), paragraphs 1 through 5, which apply if groundwater is a source of supply for the proposed Project. The source of water to the proposed Project is imported water obtained from the SDCWA. In the next few years, CMWD will be pursuing re-establishing its historical supply of groundwater from the Mission Basin of the San Luis Rey River to add to its mix of water supply options. However, this groundwater source is not required for the proposed Project.

5.7 Are There Sufficient Supplies to Serve the Project Over the Next Twenty Years?

The last step in the water supply assessment process is to prepare the assessment of the available water supplies, including the availability of those supplies during varying water–year conditions, over a 20-year planning horizon, and also to provide an assessment of how these supplies relate to project-specific and cumulative demands over that same 20-year period. In this case, that period will cover the years 2015 through 2035.

Section 10910(c)(4) states:
If the city or county is required to comply with this part pursuant to subdivision (b), the water assessment for the project shall include a discussion with regard to whether the total projected water supplies, determined to be available by the city or county for the project during normal, single dry, and multiple dry water years during a 20-year projection, will meet the projected water demand associated with the proposed project, in addition to existing and future planned uses, including agricultural and manufacturing uses.

The following sections provide the additional information required to complete the water supply assessment. These sections include discussion of the existing public water system, the historical and projected water supplies, the historical and projected water demand, comparison of the projected water supplies and demands, and the findings of the assessment. The assessment demonstrates that the CMWD's water supplies will be sufficient to meet the projected water demand associated with the proposed Project, in addition to the existing and future planned uses, during varying year conditions, for a 20-year projection.

SECTION 6

EXISTING WATER SOURCES AND WATER RIGHTS

6.1 Imported Water

The CMWD currently purchases water supplies for domestic use from the SDCWA. CMWD is one of 24 member agencies of the SDCWA, and presently has two Board members on the 36-member Board of Directors. Member agency status entitles CMWD to directly purchase water from SDCWA on a wholesale basis. CMWD also looks to the SDCWA to insure, to the best of its ability, that adequate amounts of imported water will be available to satisfy future potable water requirements.

The SDCWA annexed to Metropolitan Water District of Southern California (MWD) in 1946 and is now represented on the MWD Board by four directors, as its largest customer. SDCWA purchases water from MWD and other sources for resale to its 24 member agencies. SDCWA's water supplies and management programs are discussed in their 2010 UWMP. The SDCWA source of water is primarily imported water from the Colorado River and State Water Project. To reduce its dependency on MWD and diversify its supplies, the SDCWA in recent years has undertaken several initiatives including:

- Imperial Irrigation District (IID) Water Transfer
- All-American and Coachella Canal (ACC and CC) Lining Conserved Water
- Seawater Desalination Action Plan and Water Transfer and Banking Programs

Table 2 summarizes the SDCWA's verifiable water supplies for future years, as documented in its 2010 UWMP.

Table 2
Projected Verifiable Water Supplies for SDCWA Service Area Normal Year Conditions (AFY)

	2015	2020	2025	2030	2035
SDCWA Supplies					
IID Water Transfer	100,000	190,000	200,000	200,000	200,000
ACC and CC Lining Projects	80,200	80,200	80,200	80,200	80,200
Seawater Desalination	0	56,000	56,000	56,000	56,000
Subtotal	**180,200**	**326,200**	**336,200**	**336,200**	**336,200**
Member Agency Supplies					
Surface Water	48,206	47,940	47,878	47,542	47,289
Water Recycling	38,660	43,728	46,603	48,278	49,998
Groundwater	11,710	11,100	12,100	12,840	12,840
Groundwater Recovery	10,320	15,520	15,520	15,520	15,520
Subtotal	108,896	118,288	122,101	124,180	125,647
MWD Supplies	358,189	230,601	259,694	293,239	323,838
Total Projected Supplies	**647,285**	**767,089**	**717,995**	**753,619**	**785,685**

6.2 Recycled Water

Recycled water is supplied to the CMWD from three treatment sources and is distributed through a separate recycled water distribution system to developed areas within the CMWD service area. The system is capable of supplying over 5,000 AFY within the CMWD service area. Recycled water is delivered to over 370 irrigation sites including golf courses, parks, median strips, common area landscaping in residential and commercial developments, and other landscaped areas. In 2010, 3517 AFY of recycled water was delivered, which represented approximately 16 percent of the total water use in 2010. A 12-inch diameter recycled water distribution pipeline, at Tamarack Avenue and Harwich Drive, is near the proposed Project and the developer of the Project will be required to extend the pipeline to the Project area to provide recycled water for Home Owner Association maintained landscaped sites, and park areas.

6.3 Groundwater and Surface Water

CMWD currently does not use any local groundwater and surface water supplies, although in the past both types of water sources have been used. This included rights to Mission Basin of the San Luis Rey River of 5 cubic feet per second (cfs) up to 2,382 AFY of groundwater, pre-1914 appropriative rights, and an additional 750 AFY, up to 5 cfs, that was permitted in 1938. Additionally, there were surface water rights for 150 AF annually which were held from Calavera Creek. In addition, CMWD obtained a permit for surface water in the amount of 25 AF from Agua Hedionda Creek. These sources of water are costly to develop and maintain and therefore are currently not part of CMWD's water supply mix. However, CMWD will be pursuing investigations on re-establishing these sources because the cost to purchase imported water from SDCWA has increased significantly over the last four years which makes the other sources potentially viable.

6.4 Existing Water Quality

CMWD receives its wholesale potable water supply from SDCWA as treated water that meets existing drinking water standards. The levels of salinity can vary greatly between the two sources of imported water. Water supplies from the Colorado River Aqueduct (CRA) can reach 700 milligrams per liter (mg/L) of TDS. By comparison the State Water Project provides an average 250 mg/L of TDS from the East Branch and 325 mg/L from the West Branch. SDCWA is served from the East Branch of the State Water Project. High salinity levels can damage water delivery systems and home appliances and also cause problems for water recycling projects in the SDCWA's service area, especially for marketing recycled water to agricultural users growing salt-sensitive crops.

The quality of existing water supply sources is expected to be adequate. The salinity levels of the wholesale water supply are minimized by MWD through optimized blending approaches. The SDCWA's future planned seawater desalination supply from Poseidon Resources will help reduce TDS concentrations in the overall water supply.

Water quality affects CMWD's water management strategies through CMWD's efforts to be in compliance with Federal and State regulations. These regulations require rigorous water quality testing, source assessments, and treatment compliance. In conclusion, no water quality impacts to current and future supplies are projected.

6.5 Demand Management (Water Conservation)

Water conservation, or demand management, continues to be a significant part of regional water resource planning strategies in San Diego County. CMWD is committed to supporting these regional water conservation activities, and in many cases, provides indirect financial assistance. In addition, CMWD implements local water conservation management measures to augment and complement these regional programs.

The Best Management Practices (BMP's) as defined by the Memorandum of Understanding Regarding Urban Water Conservation in California (MOU) is administered by the California Urban Water Conservation Council (CUWCC). CMWD is an MOU signatory and implements the BMP's identified.

6.6 Historical and Projected Water Demands

Historical and projected water demands through 2035 were obtained from CMWD's 2010 UWMP. The projected water demands for CMWD are based on SANDAG population growth rate projections combined with water unit demand criteria developed by CMWD. The historical and projected potable water demands for the CMWD service area are shown in Table 3.

Table 3

Past, Current, and Projected Water Use (AF)

Water Use Sector	2005	2010	2015	2020	2025	2030	2035
Single family	9,009	7,965	9,740	9,279	9,367	9,592	9,699
Multi-family	1,963	1,769	3,219	4,285	5,292	6,604	7,416
Commercial/Industrial	3,695	2,868	3,700	3,887	4,369	4,296	4,235
Institutional/Governmental	162	122	200	122	122	122	122
Landscape	4,214	1,932	3,000	2,656	1,797	1,000	500
Agriculture	716	420	422	300	200	150	150
Other	0	0	0	0	0	0	0
Total	**19,759**	**15,076**	**20,281**	**20,529**	**21,147**	**21,764**	**22,122**

SECTION 7

EXISTING AND PROJECTED SUPPLIES

7.1 Projected Water Supplies

The CMWD imports 100 percent of its potable water from the SDCWA, which in turn, purchases water from MWD. The imported water is conveyed into the area via MWD and SDCWA facilities. Upon its formation in 1954, CMWD joined the SDCWA to acquire the right to purchase and distribute imported water throughout its service area. The SDCWA has 24 member agencies, including CMWD, and is the regional wholesaler of imported water in San Diego County.

CMWD has no current or planned future water supply projects other than possible expansions to the recycled water supply. The Poseidon Resources seawater desalination project and projects by the SDCWA are not considered to be CMWD projects, but are projects being developed by those entities. CMWD will be investigating a groundwater supply from the Mission Basin of the San Luis Rey River and Agua Hedionda groundwater basin consisting of wells , TDS treatment, and delivery facilities that could provide a supply of 1,000 AFY by 2020. However, these resources are not relied upon to supply the Proposed Project.

Current and projected water supplies for CMWD during a normal water year are presented in Table 4.

Table 4
Water Supplies – Current and Projected (AFY)

Water Supply Sources	Wholesale Supplied Volume (yes/no)	2010 (actual)	2015	2020	2025	2030	2035
SDCWA	Yes	16,170	21,348	21,610	22,260	22,909	23,286
Supplier Produced groundwater		0	0	1,000	1,000	1,000	1,000
Recycled water		3,517	5,000	6,500	6,500	6,500	6,500
Total		19,687	26,348	29,110	29,760	30,409	30,786

7.2 Factors Resulting in Inconsistency of Supply

CMWD's wholesale water supply is subject to some factors that could result in inconsistency of supply due to legal, environmental, water quality, or climatic factors. CMWD has taken steps to ensure a more consistent water supply by expanding its use of recycled water and participating in the proposed Poseidon Resources seawater desalination project. CMWD could also maximize development of recycled water and possibly groundwater. With a successful conservation program already in place, CMWD could also effectively implement temporary water use

reduction measures as defined in its water shortage contingency plan to assist in ensuring reliability.

The SDCWA has been taking steps to diversify its water supply with alternative sources. The reduced availability of any one supply source would be buffered because of the diversity of the supplies: the region is not reliant on a single source. To replace or supplement an existing supply, the SDCWA could take steps to increase development of transfers or seawater desalination. The SDCWA's 2010 UWMP should be consulted for details regarding their actions to ensure consistency of the wholesale water supply.

In the event of drought conditions, the CMWD has developed a drought response plan and water conservation plan in its Ordinance No. 44 that provides a four level rationing system based on the SDCWA Board of directors declaring a water shortage at four different levels, respectively. Ordinance No. 44 was included in the CMWD's 2010 UWMP.

SECTION 8

CONCLUSION ON AVAILABILITY OF SUFFICIENT SUPPLIES

8.1 CMWD's Projected Supply and Demand Comparison

The CMWD, SDCWA and the MWD are implementing plans that include projects and programs to ensure that the existing and planned water users within the CMWD service area have an adequate supply. The forecasted water demands from Table 3 are compared with projected supplies within the CMWD service area in Table 5 below. This demonstrates that with implementation of the projects discussed in the CMWD and SDCWA planning documents there will be adequate water supplies to serve the proposed Project along with existing and other future planned development projects or uses.

Table 5
CMWD Projected Water Supply and Demand During Normal Year for Period 2015 to 2035 (AFY)

Supply Source	2015	2020	2025	2030	2035
SDCWA	21,348	21,610	22,260	22,909	23,286
CMWD Produced Groundwater	0	1,000	1,000	1,000	1,000
Recycled water	5,000	6,500	6,500	6,500	6,500
Total	26,348	29,110	29,760	30,409	30,786
Estimated demand	20,281	20,529	21,147	21,764	22,122

The current and projected water supplies are compared to the demands for a single dry year for CMWD in Table 6. SDCWA is planning on providing additional supplies during dry years to meet higher demands during those dry years (SDCWA, 2011 UWMP). CMWD has not developed a projection for their dry year demands, but anticipates a similar magnitude increase in demands and supplies from SDCWA.

Table 6
Supply and Demand Comparison-Single Dry Year (AFY)

	2015	2020	2025	2030	2035
Supply totals	26,348	29,110	29,760	30,409	30,786
Demand totals	26,348	29,110	28,760	30,409	29,786
Difference (supply minus demand)	0	1,000	1,000	1,000	1,000
Difference as a percent of supply	0	3.4	3.4	3.2	3.2
Difference as a percent of demand	0	3.6	3.5	3.4	3.4

The projected water supplies are compared to the demands for multiple dry years for CMWD in Table 7. The additional demands during dry years and the resulting increased supply from

SDCWA have not been projected by CMWD, but are expected to be of a similar magnitude that is projected by SDCWA for the region.

Table 7
Supply and Demand Comparison – Multiple Dry Year Events (AFY)

		Supply and Demand Comparison Multiple Dry Year Events				
		2015	**2020**	**2025**	**2030**	**2035**
Multiple-dry year First year supply	Supply totals	26,348	29,110	29,760	30,409	30,786
	Demand totals	26,348	28,110	28,760	29,409	29,786
	Difference	0	1,000	1,000	1,000	1,000
	Difference as percent of supply	0	3.4	3.4	3.3	3.2
	Difference as percent of demand	0	3.6	3.5	3.4	3.4
Multiple-dry year Second year supply	Supply totals	26,879	29,239	29,888	30,484	(a)
	Demand totals	26,691	28,239	29,888	29,484	(a)
	Difference	187	1,000	1,000	1,000	(a)
	Difference as percent of supply	0.7	3.4	3.3	3.3	(a)
	Difference as percent of demand	0.7	3.5	3.5	3.4	(a)
Multiple–dry year Third year supply	Supply totals	27,420	29,368	30,018	30,560	(a)
	Demand totals	27,039	28,368	29,018	29,560	(a)
	Difference	381	1,000	1,000	1,000	(a)
	Difference as percent of supply	1.4	3.4	3.3	3.3	(a)
	Difference as percent of demand	1.4	3.5	3.4	3.4	(a)

(a) Not included because beyond the planning horizon for this Plan.

Tables 5, 6, and 7 demonstrate that supplies will be adequate to meet future demands in dry-year periods for the CMWD. An adequate supply is confirmed within the SDCWA 2010 UWMP.

SECTION 9

CONCLUSIONS

9.1 Findings of Assured Water Supply for Project

Section 10911(c) of the Water Code states *"The City or County shall determine, based on the entire record, whether projected water supplies will be sufficient to satisfy the demands of the project, in addition to existing and planned future uses."* A finding can be made that there is ensured water supply for the proposed Quarry Creek CT 11-04 Project based on the analysis contained in CMWD's 2010 UWMP, and this water supply assessment. This analysis concludes and verifies that the CMWD will have sufficient water supplies to meet demand under all conditions through the 20-year planning period ending in 2035.

9.2 Future Actions

The City will need to adopt this water supply assessment as part of the environmental review for the proposed Project, including the findings described above. Section 10911(b) of the Water Code states "The City or County shall include the water assessment provided pursuant to Section 10910, and any information provided pursuant to Division 13 (commencing with Section 21000) of the Public Resources Code."

SECTION 10

REFERENCES CITED

Carlsbad Municipal Water District, 2010 Urban Water Management Plan, adopted June 7, 2011.

CUWCC BMP Reports, 2009-2010

San Diego County Water Authority, 2010 Urban Water Management Plan, June 2011.

Carlsbad Municipal Water District – Water Master Plan Update, March 2003

State of California. (NR). California Water Code. Sacramento: State of California.
---. (2002). Senate Bill 610. Sacramento: State of California.

APPENDIX A

QUARRY CREEK CT 11-04 MASTER LAND USE PLAN

STATISTICAL SUMMARY

PA	LAND USE	GENERAL PLAN LAND USE	GENERAL PLAN DENSITY RANGE	GROSS ACRES	NET ACRES	DENSITY	MAX. UNITS
RESIDENTIAL							
R-1	Apartments *	(RH) High Density	16-23 du/ac	7.1	6.0	21.4	128
R-2	Planned Development	(RH) High Density	16-23 du/ac	11.1	9.4	21.4	202
R-3	Planned Development	(RMH) Medium-High Density	(8-16 du/ac)	6.7	5.7	14.2	81
R-4	Planned Development	(RMH) Medium-High Density	(8-16 du/ac)	18.4	15.6	12.0	186
R-5	Planned Development	(RMH) Medium-High Density	(8-16 du/ac)	5.6	4.8	11.8	66
			RESIDENTIAL SUB-TOTALS	*48.9*	*41.6*	–	*666*
PUBLIC USE							
P-1	Community Facilities	(CF) Community Facility	–	0.8	0.8	–	–
P-2	Community Facility Site	(CF) Community Facility	–	2.1	1.2	–	–
P-3	Community Recreation Area	(OS) Open Space	–	1.3	1.1	–	–
P-4	Trail, View Area, Water Quality Basin	(OS) Open Space	–	3.3	3.3	–	–
P-5	Community Facilities	(CF) Community Facility	–	0.8	0.8	–	–
			PUBLIC USE SUB-TOTALS	*8.2*	*7.1*	–	–
OPEN SPACE							
OS-1	Southerly Open Space Corridor Preserve	(OS) Open Space	–	57.9	–	–	–
OS-2	Wetland Preserve	(OS) Open Space	–	20.1	–	–	–
OS-3	Buena Vista Creek and Buffer	(OS) Open Space	–	8.4	–	–	–
OS-4	R-E Northern Brush Management Zone	(OS) Open Space	–	1.6	–	–	–
			OPEN SPACE SUB-TOTALS	*87.9*	–	–	–
	Public Roads	–	–	11.0	11.0	–	–
			PROJECT TOTALS	*156.0*	*48.7*	–	*666*

* Includes affordable and potential market rate units.

Limits of Hardline Map Boundary

Brush Management per HMP Hardline Map

NOTE: Units can be transferred subject to total project unit maximum.

FIGURE 12

Quarry Creek

Master Plan

MASTER LAND USE PLAN

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